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Subject: USGS Presentation on Seismic Risk in the Delta

Dear Chairman Isenberg and Council Members,

Contra Costa Water District (CCWD) is encouraged by the Council's progress in addressing emergency preparedness in the Delta. We offer the following comments to assist in moving this important endeavor forward:

Emergency Response Study

The Delta Plan should include an emergency response study to optimize system-wide response to a catastrophic Delta event such as a flood or an earthquake. Operations and facilities can be put in place to minimize the impacts of such an event and to quickly restore the drinking water supply after a destructive seismic event. Actions to protect water supplies and important infrastructure (including Highway 4, aqueducts, and railroads) include:

- stockpiling materials,
- building cutoff levees,
- managing reservoir and water export operations after an event, and
- coordinating responses from a multitude of agencies.

The study should be done in coordination with the ongoing Delta emergency preparedness work underway by the Department of Water Resources and the Army Corps of Engineers, the Metropolitan Water District of Southern California, and the UC Berkeley RESIN study being led by Dr. Robert Bea¹.

Earthquake Response

There is a 31% chance of a major earthquake (> 6.8) along the Hayward fault in the next 30 years². A major earthquake along the Hayward fault that resulted in multi-island levee failures could limit exports in the Delta. One recent study showed that Delta water supplies would be disrupted for approximately 4 months under a worst-case earthquake scenario without any actions taken to prevent seawater intrusion³. The

¹ <http://ccrm.berkeley.edu/resin/index.shtml>

² "Seismic Hazard in the Sacramento San Joaquin Delta." USGS presentation at January 28th 2011 Delta Stewardship Council meeting

³ "Potential Impacts of Large Scale Delta Levee Failure on BDCP Restoration and Intake Investments". RMA Presentation at the BDCP Steering Committee Meeting July 29th 2010.

results of this study are counter to the popular notion that after such an event, the Delta would be doomed to a salt water lake condition indefinitely. The rivers do not stop flowing after an earthquake, and the water that cannot be pumped flushes out the salt. Because the study did not include any special actions, it is clear the disruption to fresh water supplies could be even less with proper management actions.

A Delta Plan emergency response study should strive to minimize water supply disruption. Optimization of reservoir releases, export pumping, and placement or reinforcement of emergency barriers must be analyzed. The logistics of implementing response measures (such as the availability of barges to deliver stockpiled material) must also be considered. The BDCP studies suggest that, if properly managed, water supply impacts from a major earthquake could be comparable to those sustained during a dry year under normal system operation (we note that while a major seismic event has a 31% chance of occurring once in the next 30 years, a dry year event has a 35% chance of occurring in *any* year). Plans to optimize operations after a seismic event must be a top priority.

Flood Response

The Department of Water Resources (DWR) will release its Flood Preparedness, Response and Recovery Report in early 2012, which will contain information regarding DWR's planned response to flood-induced multiple levee breaches within the first 24 hours⁴. The Delta Plan emergency response plan should go beyond the DWR plan, and include an evaluation of system-wide reservoir and pumping operations and Delta barriers for levee breaches caused by floods or earthquakes over a longer time span. The Delta Plan emergency response study must also include an assessment of the logistics of implementing measures identified in the DWR report. For example, the feasibility of protecting the Middle River corridor in the Central and Southern Delta to ensure that water supply loss is minimized must be assessed. Metropolitan Water District of Southern California has already made substantial progress in evaluating some options that should be considered by the Council.

Communication Plan and Authority Matrix

Key criticisms of the government response to Hurricane Katrina were the lack of a communication plan, the lack of a clear division of responsibility among agencies, and an inadequate logistical implementation plan. The emergency response study in the Delta Plan should include a communications plan and should clearly delineate who is responsible for what type of response during a flood or an earthquake. There may be overlapping jurisdiction for many types of responses, and the Delta Plan emergency response study should clarify responsibilities so that swift, confident action can be taken to respond to the emergency. The study should also include administrative actions that all government agencies can take in advance to prepare for an emergency. For example, the study could include templates for letters requesting assistance that

⁴ "Delta Flood Preparedness, Response and Recovery Program", DWR presentation at the October 11th 2010 Delta Stewardship Council's Early Action Meeting

agencies could prepare and keep on hand for use as required. The Delta Plan emergency response study should identify ways to promote periodic review and updating of emergency planning and response at all levels of government.

CCWD looks forward to providing further input to the Delta Plan as the process continues. Please call me at (925) 688-8100 or Maureen Martin at (925) 688-8323 if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read 'Greg Gartrell', written in a cursive style.

Greg Gartrell
Assistant General Manager

GG/LO/MM